SITE HAZARD ASSESSMENT
GORST LANDFILL
GORST, WASHINGTON
FACT SHEET NO. 1

The US Navy is conducting a Site Hazard Assessment (SHA) of the Gorst Landfill located along State Route 3 SW near Gorst, Washington. This Fact Sheet has been prepared to inform the local community of activities being conducted by the Navy on this site. The information developed by the Navy will be used by the Washington State Department of Ecology (Ecology) to evaluate the site and rank it according to the Washington Ranking Method (WARM).

As shown on Figure 1, the Gorst Landfill is located on upper Gorst Creek approximately 2.5 miles upstream of the Suquamish Fish Hatchery. A potential concern relative to the impact of the landfill on water quality within Gorst Creek is among the questions being answered by this SHA. The SHA is designed to study the physical and chemical characteristics of the landfill and surrounding area to determine potential impacts to the area and environmental media.

What is the history of the site? The Gorst Landfill operated concurrently with the adjacent auto wrecking yard from 1968 through the late 1980s. Original operated as part of Ames Auto Wrecking, the landfill was used as a disposal site for the Puget Sound Naval Shipyard (PSNS) from July 1969 through June 1970. After the one-year PSNS contract expired, the Ames landfill continued to accept waste from public dumping and occasional demolition debris contracts. During its second ownership period as Bremerton Auto Wrecking, the owner continued the public and demolition debris operation until 1980, when the property was sold. After 1980, the landfill was permitted only for demolition debris but continued to also receive public waste.

During the duration of its operation, the landfilling of material has filled the Gorst Creek ravine. In 1968, a concrete culvert was constructed to carry creek water through and under the landfilled materials. Waste materials and soil covers were deposited in the ravine from 1968 until the landfill was closed in the late 1980s. During the landfill operation, the culvert functioned adequately during dry periods and moderate storm events, but was incapable of handling large volumes of water during heavy rains.

Currently, the Gorst Creek ravine contains an estimated 150,000 cubic yards of waste and soil cover. The top of the landfill is flush with the surrounding topography. During severe rainfall in January and February 1997, water in Gorst Creek backed up behind the landfill mass and eventually spilled over the top and down the north face. The north face of the fill slid, resulting in a release of soil and debris to Gorst Creek. In addition, the landslide left a steep and unstable face with exposed debris on the north side of the landfill.

The Washington State Department of Transportation (WSDOT) owns the property located directly to the north of the Gorst Landfill. This includes State Route 3 SW and adjacent easements. After the landslide in 1997, WSDOT installed two riprap berms with corrugated metal pipes for drainage of the creek in the easement corridor between the landfill and State Route 3 SW.

What studies have been conducted on the site to date? The Navy has been conducting a SHA of the Gorst Landfill including:

- A property boundary and topographic survey to delineate the extent of the landfill;
- A limited soil and slope stability assessment of the exposed northern slope to assess the potential for future slides;
- A hydrogeologic assessment to characterize groundwater flow in the vicinity;
- Environmental sampling and analysis to characterize the existing conditions in various media at the site; and
- A screening level assessment of potential impacts to the Suquamish fish hatchery located downstream on Gorst Creek.

What do the studies tell us about site conditions? The boundary survey clarified the extent of the landfill and indicates landfill debris is not contained by the limits of the property and likely encroaches onto surrounding properties. The elevation survey provided a detailed map of topography and previous landfill slide areas.

The soil and slope stability assessment indicated the potential exists for future sliding on the north face of the landfill and the need to control surface water flow and improve drainage to minimize this potential.

The hydrogeologic assessment indicated groundwater flows generally in a northerly direction toward Gorst Creek valley, from where it flows toward Sinclair Inlet to the northeast. Information indicates that Gorst Creek is a “gaining” creek at and downstream from the landfill. This means that groundwater is generally entering the surface water flow of the creek at this location rather than surface water entering into the groundwater system. Based on this information, it appears unlikely that surface water flowing through the landfill would adversely impact groundwater quality downstream of the site.

The sampling and analysis data for soil, sediment, surface water, and groundwater indicate minimal impacts from the landfill materials. Surface soils are not impacted by the landfill; stream sediments indicate a minor exceedence of the pesticide DDT at one location; however, the result was qualified as estimated; groundwater quality at the local Bremerton Water District well is not impacted by conditions at the landfill; and surface water analytical results indicate no exceedences of regulatory criteria. A slight increase in calcium concentrations between upstream and downstream surface water samples indicates a minor influence as the water passes through the landfill; however, the calcium concentrations are not of concern for fish.

Another finding not necessarily attributable to the landfill itself is the pH of the creek water which is elevated both upstream and downstream of the landfill.

The limited assessment of risk to fish indicates constituents are not leaching or being transported from the landfill at concentrations of concern at sampling location immediately adjacent to the landfill. Thus, no adverse impacts to the fish hatchery located 2.5 miles downstream of the landfill are expected.

What does the Navy plan to do now? These results are being reported to Ecology and being used by Ecology in its WARM process to evaluate and rank this site relative to potential concerns. Recommendations to improve and control site drainage, especially passage of Gorst Creek beneath the landfill, are being considered. In addition, means to control surface water flow and to stabilize and cap the exposed landfill materials are also being considered.

What is the likelihood that I will be impacted by site conditions? The results of these studies indicate little need for concern on the part of citizens living in the area of the landfill. The actions being considered to improve passage of Gorst Creek water beneath the landfill and to stabilize and cap exposed landfill material will improve site conditions and even further reduce the potential for any impacts from the landfill material to the local environment.

Additional information is available from the following individuals.